



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,607	07/16/2003	Yasuhide Tani	2018-750	6537

23117 7590 05/04/2005  
NIXON & VANDERHYE, PC  
1100 N GLEBE ROAD  
8TH FLOOR  
ARLINGTON, VA 22201-4714

EXAMINER

BARNEY, SETH E

ART UNIT PAPER NUMBER

3752

DATE MAILED: 05/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

e

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/619,607	TANI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Seth Barney	3752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 March 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-36 is/are pending in the application.  
     4a) Of the above claim(s) 4,5,7,12,16,17 and 19-24 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 25-33 is/are allowed.
- 6) ☒ Claim(s) 1-3,6,8-11,13-15,18,35,36 is/are rejected.
- 7) ☒ Claim(s) 34 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/5/04</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Examiner has rejoined claims 13-15 and 18 based upon the amendment to the specification as discussed in the interview on March 1, 2005.

### ***Information Disclosure Statement***

2. The information disclosure statement filed March 5, 2004 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. "Other Document" Patent Abstracts of Japan, Vol. 2002, No. 11, 6 November 2002 & JP 2002 202032 A (Unicia Jecs Corp.), 19 July 2002 has not been considered.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 13-15 and 36 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,783,087 to Aoki.

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Regarding claim 13, Aoki discloses a fuel injector having:

- a valve body (29)
- a downstream end opening. See Figure 2.
- a fuel passage communicated with the downstream end opening
- a valve seat (29a) located adjacent to the downstream end opening
- a valve member (26) located radially inward of the valve body and is seatable against the valve seat of the valve body. See figure 2.
- an injection hole plate (28) that includes a cover wall, which covers the downstream end opening of the valve body, wherein the cover wall include a thin wall portion through at least one injection hole (28a) formed in the cover wall.
- a nozzle holder (14c) includes a support portion, which supports a downstream end surface of the cover wall of the injection hole plate.
- the cover wall of the injection hole plate includes a thin wall portion and a thick wall portion, wherein the thin wall portion covers the downstream end opening of the valve body, and the thick wall portion is formed around the thin wall portion. See Figure 2 of Aoki.

Regarding claim 14, the injection hole plate is clamped between the valve body and the nozzle holder. See Figure 2.

Regarding claim 15, the injection hole plate includes a peripheral wall, which extends from the cover wall in an upstream direction, and the peripheral wall is fitted to one of the valve body and the nozzle holder. See Figure 2.

Regarding claim 36, the support portion supports substantially solely an outer peripheral edge of the thick wall portion. See Figure 2.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-3, 6, 8-11, 18, and 35 are rejected under 35 U.S.C. 103(a) as being obvious over U.S. Patent No. 6,783,087 to Aoki in view of U.S. Patent No. 6,050,507 to Holzgreffe et al.

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an

Art Unit: 3752

invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Regarding claim 1, Aoki discloses a fuel injector having:

- a valve body (29)
- a downstream end opening. See Figure 2.
- a fuel passage communicated with the downstream end opening
- a valve seat (29a) located adjacent to the downstream end opening
- a valve member (26) located radially inward of the valve body and is seatable against the valve seat of the valve body. See figure 2.

-an injection hole plate (28) that includes a cover wall, which covers the downstream end opening of the valve body, wherein the cover wall includes:

- a thin wall portion through at least one injection hole (28a) is defined,
- a thick wall portion, which is located radially outward of the thin wall portion and has a wall thickness greater than that of the thin wall portion. See Figure 2.

-a nozzle holder (14c) includes a support portion, which supports a downstream end surface of the cover wall of the injection hole plate.

Aoki does not disclose that the injection plate is welded. Holzgrefe discloses a fuel injector having an injection plate welded (25,30) to the valve body and the holder. It would have been obvious to one having ordinary skill in the art at the time the invention was made to weld the injection plate to the body or holder as taught by Holzgrefe in order to effectively secure the plate.

Regarding claim 2, the modified fuel injector has the injection hole plate clamped between the valve body and the support portion of the nozzle holder. See Figure 2 of Aoki.

Regarding claim 3, the injection hole plate is clamped between the valve body and the nozzle holder. See Figure 2 of Aoki.

Regarding claim 6, the injection hole plate further includes a peripheral wall, which extends from the cover wall in an upstream direction and the peripheral wall is fitted in one of the valve body and the nozzle holder. See Figure 2 of Aoki.

Regarding claim 8, the modified fuel injector would have the welding located radially outward of the injection hole. See Figure 1 of Holzgrefe.

Regarding claim 9, the downstream end surface of the valve member is generally flat. See Figure 2 of Aoki.

Regarding claim 10, wherein a downstream end of the valve member and the injection hole plate define a generally flat fuel space therebetween. See Figure 2 of Aoki.

Regarding claim 11, the fuel injector is of the direct injection type.

Regarding claim 18, for the aforementioned reasons it would have been obvious to weld the injection hole plate to one of the valve body and the nozzle holder at a welding portion located radially outward of the injection hole.

Regarding claim 35, the welding would substantially support the modified fuel injector.

### ***Response to Arguments***

7. Applicant's arguments with respect to claims 1-3,6, and 8-11 have been considered but are moot in view of the new ground(s) of rejection.

### ***Allowable Subject Matter***

8. Claim 25-33 allowed.

9. Claims 34 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seth Barney whose telephone number is (571)272-4896. The examiner can normally be reached on 7:30am-5:00pm (Mon-Fri).


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Scherbel can be reached on (571)272-4919. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Seth Barney  
Examiner  
Art Unit 3752

sb



**David A. Scherbel**  
**Supervisory Patent Examiner**  
**Group 3700**